



AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1 – 45. (Canceled).

46. (Previously presented) A machine for the production of a multi-layered fibrous web, comprising:

at least two formers for forming at least two layers in which each layer has a higher content of fines on one side respectively; and

a couching zone in which the at least two layers are couching together such that each layer's side having a higher content of fines contact each other;

wherein at least one of the at least two formers comprises at least one gap former.

47. (Previously presented) The machine according to claim 46, wherein the fibrous web comprises one of a paper web and cardboard web.

48. (Previously presented) The machine according to claim 46, wherein said at least one gap former comprises two circulating continuous dewatering belts convergingly arranged to form a headbox nip, and in which said dewatering belts are guided in an area of said headbox nip over a forming element.

49. (Previously presented) The machine according to claim 48, further comprising a headbox arranged to supply a fibrous suspension to said headbox nip.

50. (Previously presented) The machine according to claim 48, wherein said forming element comprises a forming roll.

51. (Previously presented) The machine according to claim 49, wherein said at least one gap former comprises a first gap former and a second gap former arranged to form at least two layers, wherein the higher content of fines side of said at least two layers occurs on a forming element side.

52. (Previously presented) The machine according to claim 51, wherein the web travel directions of said first and second gap formers are opposite each other.

53. (Previously presented) A machine for the production of a multi-layered fibrous web, comprising:

at least two formers for forming at least two layers in which each layer has a higher content of fines on one side respectively;

a couching zone in which the at least two layers are couching together such that each layer's side having a higher content of fines contact each other, wherein at least one of the at least two formers comprises at least one gap former including two circulating continuous dewatering belts convergingly arranged to form a headbox nip, and in which said dewatering belts are guided in an area of said headbox nip over a forming element; and

a headbox arranged to supply a fibrous suspension to said headbox nip,

wherein said at least one gap former comprises a first gap former and a second gap former arranged to form at least two layers, wherein the higher content of fines side of said at least two layers occurs on a forming element side, and the web travel directions of said first and second gap formers are opposite each other, and

wherein a first layer created in said first gap former is guided together with at least one of said two dewatering belts around a deflection element, and then introduced via a

continuous belt, traveling in a generally opposite direction to a stream direction of said headbox, into said couching zone in which the first layer and a second layer formed by said second gap former are couched together so that their sides having a higher content of fines come into contact with each other.

54. (Previously presented) The machine according to claim 53, wherein said deflection element comprises a deflection roll.

55. (Previously presented) The machine according to claim 53, wherein the first layer is guided around said deflection element together with an outer dewatering belt of said two dewatering belts, which does not come into contact with said forming element, and which is introduced into said couching zone via said outer dewatering belt.

56. (Previously presented) The machine according to claim 55, wherein said two dewatering belts are guided around said deflection element, and an inner dewatering belt of said two dewatering belts is separated from said outer dewatering belt which entrains the first layer following said deflection element.

57. (Previously presented) The machine according to claim 55, wherein said outer dewatering belt of said first gap former is guided in a generally horizontal direction, at least up to said couching zone.

58. (Previously presented) The machine according to claim 53, further comprising a fourdrinier former, wherein a third layer is created by said fourdrinier former and sheet formation of the third layer occurs with the higher content of fines on an outer side of the third layer facing away from said continuous belt;

wherein the first layer is guided over said deflection element and is couched

together with the third layer; and

wherein the first layer and third layer are introduced via said continuous belt into said couching zone in which the first layer and second layers, are couched together so that their sides having higher content of fines come into contact with each other.

59. (Previously presented) The machine according to claim 55, wherein said outer dewatering belt of said first gap former is separated in web travel direction in front of said deflection element from an inner dewatering belt and the first layer is guided around said deflection element only together with said inner dewatering belt.

60. (Previously presented) The machine according to claim 58, wherein the third layer and the first layer are couched together in the area of at least one of said deflection element and in a couching roll.

61. (Previously presented) The machine according to claim 53, wherein after separation of said two dewatering belts of said second gap former, the second layer is introduced together with said outer dewatering belt into said couching zone in which the first and second layers are couched together so that their sides having a higher content of fines come into contact with each other.

62. (Previously presented) The machine according to claim 48, wherein a first layer of the at least two layers to be couched together, is created by a fourdrinier former and sheet formation of the first layer occurs with the higher content of fines on an outer side facing away from a continuous wire, and wherein a second layer is created by said at least one gap former and sheet formation occurs in the second layer with a higher content of fines on the forming element side.

63. (Previously presented) The machine according to claim 62, wherein a stream direction of a headbox associated with said first gap former correlates in general with the travel direction of the first layer created by said fourdrinier former.

64. (Previously presented) The machine according to claim 62, wherein the second layer created by said at least one gap former is introduced, after a separation of said two dewatering belts of said at least one gap former, together with said outer dewatering belt into said couching zone in which the second layer is joined with said continuous belt for the first and second layers to be couched together.

65. (Previously presented) The machine according to claim 64, wherein said continuous wire is guided in said couching zone in a generally horizontal direction.

66. (Previously presented) The machine according to claim 62, further comprising a second gap former arranged to form a third layer, wherein sheet formation of the third layer occurs with a higher content of fines on a forming element side, and wherein the third layer is couched together with the second layer in a second couching zone.

67. (Previously presented) The machine according to claim 66, wherein the stream direction of a headbox associated with said second gap former corresponds to the travel direction of the first layer created by said fourdrinier former.

68. (Previously presented) The machine according to claim 66, wherein the third layer is introduced after separation of said two dewatering belts of said second gap former together with said outer dewatering belt into said second couching zone, wherein the second layer is brought together with said continuous belt for couching together the second and third layers formed by said first and second gap formers.

69. (Previously presented) The machine according to claim 66, wherein said continuous wire is guided at least in the area of said couching zones in a generally horizontal direction.

70. (Previously presented) The machine according to claim 53, further comprising at least one additional gap former arranged for the formation of an at least three-layered fibrous web, wherein sheet formation of the additional layer occurs with a higher content of fines on the forming element side, wherein the additional layer is couched in an additional couching zone with one of the at least two layers formed by the first or second gap former, and where at least one of the at least two layers is couched together with the additional layer so that their sides having higher content of fines come into contact with each other.

71. (Previously presented) The machine according to claim 70, wherein the stream direction of said headbox associated with said at least one additional gap former corresponds to the travel direction of the fibrous web to be created.

72. (Previously presented) The machine according to claim 70, wherein at least one of a multi-layered headbox and a single layered headbox is provided.

73. (Previously presented) The machine according to claim 48, wherein at least one single layered headbox is provided.

74. (Previously presented) The machine according to claim 46, further comprising uniform pressure dewatering elements for web dewatering.

75. (Previously presented) A process for the production of a multi-layered fibrous web, comprising:

forming at least two layers via at least two formers, such that each layer has a side with a higher fines content;

couching together the at least two layers in a couching zone so that the sides with higher fines content contact each other;

wherein at least one of the at least two layers is formed by at least one gap former.

76. (Previously presented) The process according to claim 75, wherein the fibrous web comprises one of a paper web or a cardboard web.

77. (Previously presented) The process according to claim 75, wherein the at least one gap former comprises two circulating continuous dewatering belts that run together forming a headbox nip and which are guided in the area of the headbox nip, loaded with a fibrous suspension by a headbox, over a forming element.

78. (Previously presented) The process according to claim 77, wherein the forming element comprises a forming roll.

79. (Previously presented) The process according to claim 77, wherein the at least one gap former comprises a first gap former and a second gap former arranged to form at least two layers, wherein the higher content of fines side of said at least two layers occurs on a forming element side.

80. (Previously presented) The process according to claim 79, wherein the first and second gap formers are operated in opposite web travel directions.

81. (Previously presented) A process for the production of a multi-layered fibrous web, comprising:

forming at least two layers via at least two formers, such that each layer has a side with a higher fines content;

couching together the at least two layers in a couching zone so that the sides with higher fines content contact each other;

wherein at least one of the at least two layers is formed by at least one gap former comprising two circulating continuous dewatering belts that run together forming a headbox nip and which are guided in the area of the headbox nip, loaded with a fibrous suspension by a headbox, over a forming element,

wherein the at least one gap former comprises a first gap former and a second gap former arranged to form at least two layers, wherein the higher content of fines side of said at least two layers occurs on a forming element side, and the first and second gap formers are operated in opposite web travel directions, and

wherein a first layer formed in the first gap former is guided together with at least one of the two dewatering belts around a deflection element, and then via a continuous belt is introduced in a direction generally opposite to the travel direction of a first headbox into the couching zone in which the first layer and a second layer formed by the second gap former are couched together so that their sides having a higher content of fines come into contact with each other.

82. (Previously presented) The process according to claim 81, wherein the deflection element comprises a deflection roll.

83. (Previously presented) The process according to claim 81, wherein the first layer created in the first gap former is guided together with an outer dewatering belt, which does not come into contact with the forming element, around the deflection element and introduced into the couching zone via the outer dewatering belt.

84. (Previously presented) The process according to claim 83, wherein the two dewatering belts are guided around the deflection element and the an dewatering belt is separated from the outer dewatering belt entraining the layer consecutive to the deflection element.

85. (Previously presented) The process according to claim 81, wherein a third layer is created by a fourdrinier former and sheet formation of the third layer occurs with the higher content of fines on an outer side facing away from the continuous belt;

wherein the first layer is guided over the deflection element and is couched together with the third layer formed by the fourdrinier former; and

wherein the first and third layers are introduced via the continuous belt into the couching zone in which the layers formed by the first and third formers are couched together so that their sides having a higher content of fines come into contact with each other.

86. (Previously presented) The process according to claim 85, wherein the outer dewatering belt of the first gap former is separated in web travel direction in front of the deflection element from the inner dewatering belt and the first layer is guided around the deflection element only together with the inner dewatering belt.

87. (Previously presented) The process according to claim 85, wherein the third layer and the first layer formed in the first gap former are couched together in the area of at least one of the deflection element and a couching roll.

88. (Previously presented) The process according to claim 83, wherein the second layer is guided after the separation of the two dewatering belts of the second

gap former together with the outer dewatering belt to the couching zone, in which the first and second layers are couched together so that their sides of higher content of fines come into contact with each other.

89. (Previously presented) The process according to claim 75, wherein the first of the at least two layers to be couched together is created by a fourdrinier former and sheet formation of the first layer occurs with a higher content of fines on the outside facing away from the continuous wire, and the second layer is created by the at least one gap former and sheet formation occurs in the second layer with a higher content of fines on a forming element side.

90. (Previously presented) The process according to claim 89, wherein the stream direction of a headbox associated with the first gap former correlates in general with the travel direction of the first layer created by the fourdrinier former.

91. (Previously presented) The process according to claim 89, wherein the second layer created by the at least one gap former is guided to the couching zone after separation of the two dewatering belts of the at least one gap former together with the outer dewatering belt, in which the second layer is joined together with the continuous belt for the first and second layers to be couched together.

92. (Previously presented) The process according to claim 89, wherein a second gap former is arranged to form a third layer wherein sheet formation of the third layer occurs with a higher content of fines on the forming element side, and wherein the third layer is couched together with the second layer in a second couching zone.

93. (Previously presented) The process according to claim 92, wherein the stream direction of a headbox associated with the second gap former corresponds to the travel direction of the first layer formed by the fourdrinier former.

94. (Previously presented) The process according to claim 92, wherein the third layer is introduced after separation of the two dewatering belts of the second gap former together with the outer dewatering belt into the second couching zone in which it is brought together with the continuous belt for the couching of the second and third layer formed by the first and second gap formers.

95. (Previously presented) The process according to claim 79, wherein at least one additional gap former is arranged for the formation of an at least three-layered fibrous web, wherein sheet formation of the additional layer occurs with a higher content of fines on the forming element side, wherein the additional layer is couched in an additional couching zone with one of the at least two layers formed by the first or second gap former, and where at least one of the at least two layers is couched together with the additional layer so that their sides having higher content of fines come into contact with each other.

96. (Previously presented) The process according to claim 95, wherein the stream direction of a headbox associated with the additional gap former corresponds to the travel direction of the fibrous web to be created.

97. (Previously presented) The process according to claim 77, wherein at least one of a multi-layered headbox and single-layered headbox is used.